

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES *
2. AMENDMENT/MODIFICATION NO. PR-CI-03-10585/0002		3. EFFECTIVE DATE 06/19/03		4. REQUISITION/PURCHASE REQ. NO. PR-CI-03-10585
5. PROJECT NO. (If applicable)				
6. ISSUED BY Environmental Protection Agency Contracts Management Division 26 W. Martin Luther King Drive Cincinnati, OH 45268		7. ADMINISTERED BY (If other than item 6) Not Applicable.		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) To All Offerors/Bidders.		9A. AMENDMENT OF SOLICITATION NO. PR-CI-03-10585 9B. DATED (SEE ITEM 11) 06/04/03 10A. MODIFICATION OF CONTRACT/ORDER NO. 10B. DATED (SEE ITEM 13)		
CODE		FACILITY CODE		
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning <u> 1 </u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A			
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).			
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:			
	D. OTHER (Specify type of modification and authority)			
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)				
The purpose of this amendment is to answer questions received in response to this solicitation.				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED	
(Signature of person authorized to sign)		(Signature of Contracting Officer)		

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PREVIOUS EDITION UNUSABLE

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STANDARD FORM 30 (REV 10-83)
Prescribed by GSA
FAR (48 CFR) 52.243

AMENDMENTS TO THE SOLICITATION

1. The attachment entitled "QUESTIONS AND ANSWERS" has been added. The text is as follows:

4-Wheel Drive Medium Duty Dynamometer for NVFEL Response to Questions from Potential Offerors

Section 1.5.2

Q. Are there any more details on the type of pre and post test checks.

A. Specific requirements for monitoring and reporting of quality indicators are found in several sections of the Statement of Work. It is expected that the contractor will develop and propose efficient strategies for assuring, and documenting through the reporting function, that the dynamometer is performing according to those functional requirements and specifications, along with any other quality indicators that may be significant by the product specific functioning of the dynamometer.

Section 2.2.2

“Warning lights and display messages indicating the status of the axle centering system and roll brakes, shall be visible from the driver of the vehicle, and others in the immediate vicinity of the dynamometer. An audible and visual alarm shall be activated 3 to 5 seconds prior to movement of a dynamometer roll for wheelbase length adjustment. Safety signs warning of moving rolls shall be provided for all doors into the test cell and dynamometer pit. A sign designating the meaning of warning lights shall be permanently affixed adjacent to such devices. Such signs shall be readable from a distance of approximately 12 feet.”

Q. Would it be acceptable if lamps were used to indicate the status in-cell.

A. EPA views the movement of the rolls for adjustment of wheelbase length as a potential hazardous condition. We envision that a warning beacon and low-level audible alert would be prudent safety devices to be activated in the test cell during this operation. Since this operation is controlled, or at least monitored, by DCCS it would be advisable to display a status message on the main DCCS display as well.

When the roll brake is activated illumination of a lamp on the driver's pendent or VDA boom, along with display of an appropriate message on the main DCCS screen, will be sufficient.

Section 2.3.4

“The system shall be capable of testing a FWD or RWD vehicle in the 4WD mode of operation whereby the rolls supporting the non-driving wheels are motored synchronous with the rolls loading the driving wheels as would occur on a flat road. In any simulation mode, either dynamometer shall also provide augmented braking, road grade simulation and low power vehicle adjustment (load reduction) as independent, selectable options.”

Q. Is the augmented braking a voltage demand into the system.

A. No. We envision augmented braking to be a self contained function within the dynamometer control system, made available for a specific test via the pre-test information file, or user interface at the time of test set-up. The augmented braking shall engage if the dynamometer senses a vehicle braking force in excess of a configurable threshold. The degree of braking force applied by the dynamometer would be proportioned according to a configurable "gain" value. In certain cases augmented braking is beneficial to reduce wear and tear on the vehicle. In other cases, such as with vehicles utilizing regenerative braking, the use of dynamometer augmented braking would produce serious area in the accuracy and representativeness of a test.

Section 2.3.13 Low Power Vehicle Adjustment (LPVA)

Q. Is the force reduced for the duration of the digital signal. Is the force adjustment just applied to the RLM force?

A. Yes. Force is to be reduced while the digital input is "on". The force adjustment will be a proportional adjustment to the total force applied to the vehicle.

Section 2.3.11

“The measured simulation error of the total road force, including the inertia force shall not exceed the greater of ± 2.0 pounds or $\pm 1\%$ of the target value, according to the above force formula, under all operating conditions and at all velocities. This measurement shall utilize the 1-second average of force and speed when acquired at 10-Hz, or faster.

Q. What is meant by the highlighted part? A form of log and post-test analysis is implied. Can you please confirm/clarify

A. The one second average of any set of x contiguous values collected at x Hertz will be utilized to determine compliance with requirements to remain within ± 2.0 pounds or $\pm 1\%$ of the target value. A log file is required during certain operations, so this requirement could be met through

post test analysis of a log file or through continuous monitoring and exception logging.

Section 2.3.20, Mechanical Base Inertia Verification Test

Q. Our standard test utilizes a difference process, but the ultimate result of verification of the base mechanical inertia is achieved. Will the EPA accept such an alternative test to verify base mechanical inertia?

A. No. The procedure outlined in the SOW is the standard procedure used for existing 48-inch roll diameter AC dynamometers at NVFEL. EPA seeks to continue the use of that procedure for the dynamometer procured under this contract. However, alternative solutions may be proposed during the implementation phase of the contract, but the contractor should be prepared to deliver a dynamometer capable of performing the specified function.

Section 2.3.24

(Second block of bullet points, third point)

Q. "Calculated frictional coefficients": could this comprise Friction losses, Vehicle losses and RLM coefficients?

A. Yes. We would be looking for separate sets of coefficients for each of these categories of losses.

Section 2.4.14, Interface of DCCS with other Computer Systems

Q. Is it acceptable for the dynamometer control system to place the data in a folder (shared common area) on the DCCS for the IFC to access?

A. Yes

Section 2.4.17, Real-Time Data Monitoring and Recording

Q. Do the EPA want to continuously log the data or would a post-mortem type log suffice?

A. Continuous logging during testing, at user selectable frequencies, is the requirement. Post-mortem logs may be sufficient and necessary under circumstances where the system user has chosen to not log data on a continuous basis.

Section 2.4.22

Q. Concerning the "Operating Hours Counter": Is a hardware solution mounted on the control cabinet door an acceptable solution?

A. Yes. A hour meter type device, with a resolution of whole hours, would be acceptable.

Section 5.1.12

Q. What exactly is meant here. Do the EPA want to start a high speed log and to include the parameters identified as channels within the log. It appears that there is real time information in a summary table. Please comment and expand on precise requirements.

A. What is required for tests conducted in association with acceptance activities, is continuous data recorded at minimum of 10 Hz for the specified parameters, and saved to allow for post test analysis and documentation of compliance.

Section 5.4.1

Q. Can the EPA elaborate on their definition of the "timing test"?

Why is the electrical inertia simulation response test to be performed at the base mechanical inertia, as no inertia is being electrically simulated at the base mechanical inertia?

A. The timing test is essentially the same operation as the Section 5.6 "Determination and Verification of the Mechanical Inertia of the Rolls," but conducted for the purpose of measuring the response time of the dynamometer when responding to abrupt changes in force vectors.

Section 5.4 - 5.14

Q. Are all the tests in 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14 procedures to be performed in order to independently verify the performance of the rig?

A. Yes.

Appendix C, Interface Computer (IFC)

Q. Appendix C details the requirement for the DCCS to receive and utilise vehicle and other pre-test information from the LNS (Laboratory Network System), to include:

- variable names
- formats

definitions

The file 'Format1:' example includes numerous parameters, of which it is perceived only a minority would be relevant to the dynamometer. Are we expected to accommodate all (or a similar number of) parameters given in the file 'Format1:' example? On first appearances it would appear only the set and target dynamometer coefficients are relevant.

A. The intent was to provide the overall format of the file. The dynamometer system should only respond to relevant parameters necessary for performance of vehicle tests and properly labeling reports. Additional parameter may be included in the pre-test information as needed by the dynamometer system to perform the various functions required in the Statement of Work.

Q. How is it envisaged the DCCS utilises the pre-test information?

A. To properly configure the dynamometer to fulfil the requirements within the Statement of Work including, but not limited to, proper simulation of road forces, proper identification of the vehicle, test, proper engagement of augmented braking etc.

Q. Are we correct in believing there is no requirement for the DCCS to create pre-test files, just to receive/utilise them?

A. DCCS does not need to create pre test files per se, but needs to provide the utility of manually entering information in situations where a pretest file does not exist.

Appendix D, General Interface Guidelines

Q. Appendix D details an extensive list of files, i.e.

- 1.6.1 Test Site Configuration Files
- 1.6.2 Dynamometer Configuration Files
- 1.6.3 Site Computer and Instrumentation System Configuration Files
- 1.6.4 Site and Instrumentation Options Selection and Control Parameters Files
- 1.6.5 Test Sequence Control Schedules and Parameters Files
- 1.6.6 Driving Schedule Files
- 1.6.7 Shift Schedule Files
- 1.6.8 Vehicle and Test Parameter Files
- 1.6.9 Test Definition Files
- 1.6.10 Mode Definition Files
- 1.6.11 Acquired Hertz Data Files
- 1.6.12 Acquired Non-Hertz Data Files
- 1.6.13 Input File Validation Reports

1.6.14 Data Analysis Report Files

1.6.15 Event Log Files

Are all these files applicable to the DCCS?

A. No. Many of these files are not relevant to the dynamometer. The general interface guidance applies ad hoc where no other explicit guidance is provided.

Q. For clarity, can each file be identified as being pre-test, post-test, or both.

A. The list of "files" is a logical construction for identifying collections of information commonly shared at test sites. The information in the files could be rearranged or combined into more or fewer file as mutually agreed upon by the DCCS, TDAP, instrumentation system or IFC providers. This information may be exchanged between the DCCS and other computer systems using mutually agreeable protocols but ultimately needs to be available in text file form. The following provides additional information regarding the referenced files:

- 1.6.1 Test Site Configuration Files - This information is defined pre-test but used post-test to document test conditions - Potentially used by DCCS
- 1.6.2 Dynamometer Configuration Files - This information is defined pre-test, used during tests and will be used post-test to document test-time conditions - This information shall be available to the TDAP and IFC.
- 1.6.3 Site Computer and Instrumentation System Configuration Files - defined pre-test, may be used by the dynamometer during tests and used post-test to document test-time conditions. - Potentially used by DCCS.
- 1.6.4 Site and Instrumentation Options Selection and Control Parameters Files - defined pre-test, are used during tests and used post-test to document test-time conditions. - Potentially used by DCCS. The DCCS contributes to this collection of information since it is a test site instrument. DCCS user option selections need to be available post-test to document test-time conditions.
- 1.6.5 Test Sequence Control Schedules and Parameters Files - defined pre-test used during tests and may be used post-test to document test-time conditions. - Not normally used by DCCS.
- 1.6.6 Driving Schedule Files - defined pre-test, used during tests and used post-test for analysis and reporting of test-time conditions - Not normally used by DCCS.
- 1.6.7 Shift Schedule Files - defined pre-test, used during tests and may used post-test to document test-time conditions -- not normally used by DCCS.
- 1.6.8 Vehicle and Test Parameter Files - defined pre-test, used during tests and used post-test to document test-time conditions -- This information is available to the DCCS and TDAP from the IFC in "pre-test files" (described in Appendix C). The DCCS will use some of these parameters, such as RL coefficients, to control tests. Other parameters will be used

- by the DCCS to properly label reports, files and document tests.
- 1.6.9 Test Definition Files - defined pre-test, used during tests and used post-test to document test-time conditions - Not normally used by DCCS.
 - 1.6.10 Mode Definition Files - defined pre-test, may be used during tests, then used post-test to for analysis and reporting of test-time conditions - Not normally used by DCCS.
 - 1.6.11 Acquired Hertz Data Files - data items and frequency selected pre-test, generated during tests and used post-test for analysis and reporting of test-time conditions - The DCCS is expected to generate these files.
 - 1.6.12 Acquired Non-Hertz Data Files -data items may be collected pre-test or during tests and used then used post-test to document test conditions - The DCCS is likely to produce these files.
 - 1.6.13 Input File Validation Reports - created and used outside of test time. -- The highest quality DCCS will validate DCCS relevant input information and provide reasonable exception reports or logs of the receipt of erroneous or unusual information
 - 1.6.14 Data Analysis Report Files - Data analysis reports will be generated ad hoc as specified in other sections of this contract.
 - 1.6.15 Event Log Files - It is expected that DCCS will generate event logs. This information might be combined with "Acquired Hertz Data Files".

Q. 'Site and Instrumentation System Configuration Files' (section 1.6.4) makes reference to non-existent section 4.3.1.1. What is the correct reference?

A. This was an unintentional carry-over from another document and is not relevant to this Statement of Work and should be disregarded.

Q. In the absence of a dynamometer controlled gear changer and driver's aid, are 'Shift Schedule Files' relevant?

A. No.

Q. 'Event Log Files' (section 1.6.15) makes reference to non-existent 4.4.6.5. What is the correct reference?

A. This was an unintentional carry-over from another document and is not relevant to this Statement of Work and should be disregarded.

Q. There is a document from the EPA that we are looking for. In section 1.6.7 of Appendix D of S.O.W. it states that we need to match the EPA shift schedule file format documented in the EPA Application for Certification Format Document. Can you supply us with a copy of this document or advise how to obtain this document.

A. Information related to EPA shift schedule file formats may be found on the internet at <http://www.epa.gov.otaq/labda.htm>. However, providing for this particular file format is not necessary for fulfilling the requirements of this contract. Appendix D provides general interface guidance for various kinds of equipment, as explained in other responses above. Only those portions of Appendix D relating to information required by the dynamometer system to meet the requirements of the Statement of Work are relevant.

Appendix E, Dynamometer Data and Control Interface

Appendix E details an AK Host link between the DCCS & TDAP (Test-Control, Data Acquisition and Processing).

Q. Why are the road load model coefficients in both the pre-test information files from the IFC and the TDAP?

A. If the procedure scheduled to be performed on the dynamometer is an emissions test, the standard path for data transmission would be via TDAP. If the procedure is a test prep or other type of non-emissions procedure the path may be either IFC or TDAP. TDAP utilizes the same files from IFC for this information. If the dynamometer is to be utilized independently from TDAP functions, it can be more expedient to transfer this data directly from IFC.

Section 1.3.1, D329 Light/Medium Duty, FWD/RWD/4WD Test Site Overview

Q. This section identified that the pit depth is 9'. As the dynamometer by its very nature (48" rolls) will be significantly shorter in height than 9', will the EPA provide concrete plinths to mount the dynamometer on to build up any deficit between the total height of the dynamometer and the pit depth?

A. No. Adapting the constructed pit to the dynamometer contractor's specific requirements will be the responsibility of the dynamometer contractor.

Q. Will the EPA cast the pit floor foundation pockets (for bolting dynamometer to pit floor) to the contractors specifications?

A. No, adapting the constructed pit to the dynamometer contractor's specific requirements will be the responsibility of the dynamometer contractor. The upper edge of the pit will have a ledge as described in the Statement of Work and illustrated in the attached figures.

Section 2.1.6, Fixed and Moveable Decking

Q. This section specifies that decking shall be capable of supporting test vehicles. Does this mean that the entire floor section shall be capable of carrying the maximum axle load, or are areas outside of the vehicle track exempt from this load bearing specification (i.e. the area between the inside edges of the rolls and beyond the outside edges of the rolls where a vehicle would not be required to drive over)?

A. All parts of the decking are required to support the weight of test vehicles.

Section 2.1.12, Wheelbase Adjustment

"...After adjustment, the moveable roll set shall remain positively fixed on the base rail frame..."

Q. Does the statement "shall remain positively fixed" infer that the moving baseframe needs to be physically clamped to the slideway beams?

A. The statement, "shall remain positively fixed", means that the movable roll should not move after roll position adjustment has been completed under any potential conditions, such as the loss of electrical power.

Sections 2.1.26 - 2.1.28, Axle Centering System

Q. Do the EPA require tyre centring devices on both the fixed and moving axles of the dynamometer. Furthermore, does the EPA require a 'lift' functionality on the centering system, which will allow the vehicle to be lifted clear of the rolls. This feature allows for a friction calibration of the dynamometer to take place without removing the vehicle, thus increasing set-up efficiency.

A. Roll centering devices are to be provided for both rolls. The dynamometer will be used to test a wide range of vehicle configurations. When not in four wheel drive mode, or all wheel drive mode, front wheel drive vehicles will normally be tested on the front set of rolls and rear wheel drive vehicles on the rear rolls. Thus roll centering is required for both sets of rolls. Lift functionality is not specifically required by the Statement of Work, but would potentially be considered a benefit, providing it did not detract from any of the SOW requirements.

Section 1.3.1, D329 Light/Medium Duty, FWD/RWD/4WD Test Site Overview

The final paragraph in this section discusses the possible future location of a 72" dynamometer.

Q. Can the EPA provide the power rating and characteristics of the truck dynamometer. Ideal

information requirements include complete motor nameplate details of the AC motors.

A. EPA does not have such information at this time. Offerors were provided with this information so they could provide a discussion in their proposal of any available system flexibilities that would accommodate this future system.

Section 2.1.4 Dynamometer Pit

Q. With regard to the "Class 1, Division 2, Group D" requirement for the pit, is this mandatory or can we utilise the force ventilation approach to relax the classification?

A. No this is not mandatory. In our judgement, available ventilation relaxes the classification.

Q. This section states that "...installation and configurations shall provide operational conditions that can be configured as intrinsically safe wherever feasible". The encoders and loadcells are an integral part of the proprietary equipment and cannot be made intrinsically safe. Is this acceptable?

A. Yes. However, all switches and lights should be protected from breakage or spark generation. Motors or cooling fans should not emit any sparks and other devices should have wiring contained in conduits.

Section 3.1.5, Speed Measurement Verification

Q. Is a handheld tachogenerator as an independent speed measurement device an acceptable solution for the EPA for the purpose for verifying the accuracy and precision of the speed measurement process on each dyno and as a synchronous pair.

A. No. In our experience a hand held tach would not provide a reliably sufficient level of precision and accuracy for this verification. The precision and accuracy of the independent speed measurement must exceed the dynamometer requirements.

Appendix E, Dynamometer Data and Control Interface

Q. Can the digital interfaces between the DCCS and the TDAP be via voltage free contacts to ensure mutual isolation?

A. The nominal requirement is as stated in Appendix E. The introduction to Appendix E provides for some flexibility in meeting these requirements. If the conditions outlined in that introduction are not present, the contractor must conform to the nominal requirements as presented.

Section 5.1.1, General Provisions

Q. Concerning "...verification shall take place to the greatest extent possible , at the contractors point of final assembly prior to delivery...", can the EPA define "the greatest extent possible" and quantify the minimum expectations?

A. The minimum requirement would be to perform all verifications except those requiring the actual testing of a vehicle prior to shipment.

Attachment 6: Quality Assurance Provisions, Final Acceptance Testing:

Q. It reads in the Incentive/Disincentive box that the contract price will be reduced by \$1,000 every day after 55 days. Maximum incentive shall not exceed \$70,000. Should this read disincentive, and is there an incentive for being completed in under 55 days for final acceptance testing?

A. "Disincentive" would be correct in this case. There is no incentive associated with early completion of final acceptance testing.